Amendments to Specification

Please amend page 3, paragraph 2 of the original specification as follows:

In view of this, an object of the present invention is to provide a method and a device for estimating carrier frequency offset in a subscriber ~~to make the carrier frequency offset in a subscriber terminal to meet the system requirements~~ to make the carrier frequency offset in a subscriber terminal meet the system requirements and thus improve the probability of success for the initiate search for a cell.

Please amend page 4, paragraph 2 to page 7, paragraph 2 of the original specification as follows:

To achieve the above object, the present invention provides a method for estimating carrier frequency offset in a subscriber terminal in TD-SCDMA system, ~~said~~ the method comprises steps:

A. determining number of effective base stations with same carrier frequency from which more than one signals are received by a subscriber terminal and main path positions of each signal;

B. combining the signals of each base station with same carrier frequency corresponding to ~~said~~ the number of effective base stations with same carrier frequency based on the main path positions obtained in step A;

C. calculating a rough estimation value of the carrier frequency offset based on combined signal in step B.

~~Said~~ The determining number of effective base stations with same carrier frequency from which more than one signals are received by a subscriber terminal in step A comprises steps:

A1. calculating peak power value of each signal received by a subscriber terminal, and selecting the peak power values of ~~predefined number of base stations~~ predefined maximum number of base stations from higher to lower;

A2. determining the number of effective base stations with same carrier frequency from ~~predefined signals~~ the signals determined in step A1 by the predefined maximum number of base stations with same carrier frequency are received by the subscriber terminal by comparing the ratio of the highest peak power value from the order in step A1 to the subsequent peak power values with the given threshold.

~~Said~~ The signals are synchronous downlink pilot signals, and ~~said~~ the step A1 further comprises steps:

A11. shift multiple correlating a local synchronous downlink pilot code and a received synchronous downlink pilot signal ~~results~~ resulting in a power value of the synchronous downlink pilot signals received by the subscriber terminal;

A12. determining peak power values corresponding to each of the synchronous downlink pilot codes.

~~Said step~~ Step A2 further comprises steps:

A21. numbering the peak power values ordered from the highest to the lowest and setting a current sequence number as predefined number of the base stations with same carrier frequency;

A22. determining whether the highest peak power value and a peak power value corresponding to the current sequence number are greater than the given threshold, if so, setting the number of effective base stations with same carrier frequency from which the signals are received by a subscriber terminal as the value of the current sequence number, otherwise, the current sequence number decreases by one and returns back to step A22.

The method further comprises a step before ~~said~~ step A: reading vector data of 128 chips while receiving synchronous downlink pilot signals at the beginning of a downlink pilot time slot.

The method further comprises a step before step B: multi-path combining signals of each base station with same carrier frequency.

~~Said~~ The step of multi-path combining signals of each base station with same carrier frequency comprises steps:

beginning from a point of previously predetermined number of the peak power value, reading

data of synchronous downlink pilot signals at a point which is 2 times of ~~the predetermined~~ a predefined value added length of ~~said~~ the synchronous downlink pilot code;

performing Max Ratio Combination after eliminating phase difference between symbols of multi-path synchronous downlink pilot signal with different time delay and the phase difference of delay path.

~~Said step~~ Step B of combining the signals of each ~~station~~ base station with same carrier frequency corresponding to the number of effective base stations with same carrier frequency is: equal gain combining or weight combining signals of each base station with same carrier frequency corresponding to ~~said effective base station number~~ the number of base stations with same carrier frequency to obtain an combined signal sequence.

~~Said step~~ Step C is to obtain a rough estimating value of the carrier frequency offset according to the phase difference between two symbols spaced by a defined distant in ~~said~~ the combined signal sequence.

~~Said step~~ Step C further comprises: estimating carrier frequency offset for a predefined times, and then averaging them to get a carrier frequency offset estimation.

~~Said step~~ Step C is to sum up the phase differences between two symbols spaced by a defined distant in said combined signal sequence, and then computing the phase angle to get the carrier frequency offset estimation.

The invention also provides a device for estimating carrier frequency offset in TD-SCDMA system, which comprises at least:

a decision module for determining effective ~~base station number~~ the number of base stations with same carrier frequency from which signals are received by a subscriber terminal and a main path position of signal transmitted from each base station with same carrier frequency based on the signals received by a subscriber terminal, and then outputting the number of the effective base station and the main path position of each signal to an combining module ;

an combining module for combining the signals from each base station corresponding to the number of effective base stations with same carrier frequency based on the main path position of

signals and then outputting the combined signals to a carrier frequency offset acquiring module;

a carrier frequency offset acquiring module for ~~obtaining~~ calculating a rough estimating value of the carrier frequency offset based on the combined signals.

~~Said~~ The device further comprises a multi-path combining module for multi-path combining the signals of each base station with same carrier frequency, and then outputting the multi-path combined signal to the combining module, if ~~the base station number~~ the number of effective base stations with same carrier frequency is greater than 1.

Please amend page 9, paragraph 1 of the original specification as follows:

The first step, in step 201, determines the SYNC_DL signals simultaneously received by a subscriber terminal from several effective base stations with the same frequency and the respective arriving time of their main path.